



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,888	03/22/2004	Tetsuya Onuma	B-5400 621780-9	2388
7590	08/28/2006		EXAMINER	
LADAS & PARRY Suite #2100 5670 Wilshire Boulevard Los Angeles, CA 90036-5679				RU, POWEN
				ART UNIT 2631
				PAPER NUMBER

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/806,888	ONUMA, TETSUYA
	Examiner Pown Ru	Art Unit 2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 3/22/2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 3/22/2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 20040322.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

This is the initial office action based on the application filed on 03/22/2004.

Claims 1-19 are currently pending and have been considered below.

Claim Objections

1. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 9 depends upon Claim 3, but also recites the identical limitations.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 11, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (2002/0017423) in view of Shimomura et al. (2002/0044671)
Claim 1: Kato discloses a loudspeaker (speaker 10 [0045]) comprising a frame (F [0045]) having a recess (the are occupied by yoke 11, see Fig. 1); a magnetic circuit unit (magnetic circuit system assembly M1 [0045]) received in the recess of the frame (see Fig. 1), said magnetic circuit unit comprising a yoke (11 [0046]); a vibration unit

received in the recess of the frame (vibration system assembly V1 [0045]); but does not specifically disclose a snap fastening device. However, Shimomura et al. discloses a snap fastening device (see Fig. A-C) for connecting the yoke to the frame. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a snap fastening device in a loudspeaker assembly. As Shimomura et al. teaches that the device prevents the yoke from falling off the frame, one would have been motivated to add Shimomura's snap fastening device to Kato's loudspeaker.

Claim 2: Kato and Shimomura et al. disclose a loudspeaker as in Claim 1; but Kato does not specifically disclose a snap fastening device. However, Shimomura et al. discloses a snap fastening device comprising male members (expansion 20b [0047]) and female members (clip section 21a [0047]) with which the male members are to be engaged (engagement [0047]), said male members being formed on any one of the frame and the yoke along a circle, which is concentric with a central axis thereof (see Fig. A-C), and said female members being formed on an other of the frame and the yoke, the male members and the female members being engaged with each other by bringing the yoke into contact with the frame and turning the yoke along the circle (see Fig. A-C). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a snap fastening device in a loudspeaker assembly. As Shimomura et al. teaches that the device prevents the yoke from falling off the frame, one would have been motivated to add Shimomura's snap fastening device to Kato's loudspeaker.

Claim 3: Kato and Shimomura et al. disclose a loudspeaker as in Claim 1; and Kato further discloses that the yoke has a cylindrical member (second cylindrical yoke 11B [0046]); and the vibration unit comprises a damper (damper 18A/18B [0048]), a cone (cone 16 [0048]), a voice coil bobbin (voice coil bobbin 14 [0046]) and a connection member (drive cone 16A [0049]) by which the damper, the cone and the voice coil bobbin are combined together ([0051], see Fig 1), the connection member having a ring-shaped recess (inverted-V-shaped section [0050]) into which the cylindrical member of the yoke is to be received (see Fig. 1).

Claim 11: Kato and Shimomura et al. disclose a loudspeaker as in Claim 3; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

Claim 19: Kato and Shimomura et al. disclose a loudspeaker as in Claim 11; as the claim recites the same limitations from Claim 11 (see **Claim Objections**), the rejection against Claim 11 holds against this claim.

4. Claims 4, 7, 8, 12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (2002/0017423) in view of Shimomura et al. (2002/0044671) and further in view of Nation (4,565,905).

Claim 4: Kato and Shimomura et al. disclose a loudspeaker as in Claim 1; and Kato further discloses that the connection member has a skirt portion (skirt 16Ab [0050]) coming into contact with the damper and the cone; but does not disclose a plurality of ribs on the skirt portion. However, Nation discloses a plurality of ribs (28, col 7 line 38) in a speaker assembly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use ribs in a loudspeaker assembly. As Nation teaches that the ribs provide increased rigidity of the cylinder portion (col 7 lines 33-38), one would have been motivated to add Nation's ribs to Kato's loudspeaker.

Claim 7: Kato, Shimomura et al., and Nation disclose a loudspeaker as in Claim 3; but Kato does not disclose a ring-shaped groove in the connection member. However, Nation discloses a ring-shaped groove (annular groove 314, col 16 lines 20-25) which mates with a circular ridge (344) to fix a damper (spider) in a speaker assembly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a ring-shaped groove. As the ring-shaped groove can hold the damper in place before adhesive procedure, one would have been motivated to add Nation's groove to Kato's loudspeaker.

Claim 8: Kato, Shimomura et al., and Nation disclose a loudspeaker as in Claim 4; but Kato does not disclose a ring-shaped groove in the connection member. However, Nation discloses a ring-shaped groove (annular groove 314, col 16 lines 20-

25) which mates with a circular ridge (344) to fix a damper (spider) in a speaker assembly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a ring-shaped groove. As the ring-shaped groove can hold the damper in place before adhesive procedure, one would have been motivated to add Nation's groove to Kato's loudspeaker.

Claim 12: Kato, Shimomura et al., and Nation disclose a loudspeaker as in Claim 4; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

Claim 15: Kato, Shimomura et al., and Nation disclose a loudspeaker as in Claim 7; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

Claim 16: Kato, Shimomura et al., and Nation disclose a loudspeaker as in Claim 8; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

5. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (2002/0017423) in view of Shimomura et al. (2002/0044671) and further in view of Kato954 (2001/0004954).

Claim 5: Kato and Shimomura et al. disclose a loudspeaker as in Claim 3; and Kato further discloses that the connection member has an inclined surface (inner circumferential edge of the main body 16Aa [0050]) extending toward a rear side of the frame (see Fig. 1); but does not specifically disclose a plurality of grooves on the inclined surface. However, Kato954 discloses a plurality of grooves (10 [0027]) on a cone-type diaphragm. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use grooves in a loudspeaker assembly. As Kato954 teaches that the ribs increase the adhesion area([0027]) and thus enhance bonding strength, one would have been motivated to add Kato954 ribs to Kato's loudspeaker.

Claim 13: Kato, Shimomura et al., and Kato954 disclose a loudspeaker as in Claim 5; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

6. Claims 6, 9, 10, 14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (2002/0017423) in view of Shimomura et al. (2002/0044671) and Nation (4,565,905), and further in view of Kato954 (2001/0004954).

Claim 6: Kato, Shimomura et al., and Nation disclose a loudspeaker as in Claim 4; and Kato further discloses that the connection member has an inclined surface (inner circumferential edge of the main body 16Aa [0050]) extending toward a rear side of the frame (see Fig. 1); but does not specifically disclose a plurality of grooves on the inclined surface. However, Kato954 discloses a plurality of grooves (10 [0027]) on a cone-type diaphragm. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use grooves in a loudspeaker assembly. As Kato954 teaches that the ribs increase the adhesion area([0027]) and thus enhance bonding strength, one would have been motivated to add Kato954 ribs to Kato's loudspeaker.

Claim 9: Kato, Shimomura et al., and Kato954 disclose a loudspeaker as in Claim 5; but Kato does not disclose a ring-shaped groove in the connection member. However, Nation discloses a ring-shaped groove (annular groove 314, col 16 lines 20-25) which mates with a circular ridge (344) to fix a damper (spider) in a speaker assembly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a ring-shaped groove. As the ring-shaped groove can hold the damper in place before adhesive procedure, one would have been motivated to add Nation's groove to Kato's loudspeaker.

Claim 10: Kato, Shimomura et al., Nation, and Kato954 disclose a loudspeaker as in Claim 6; but Kato does not disclose a ring-shaped groove in the connection member. However, Nation discloses a ring-shaped groove (annular groove 314, col 16 lines 20-25) which mates with a circular ridge (344) to fix a damper (spider) in a speaker assembly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a ring-shaped groove. As the ring-shaped groove can hold the damper in place before adhesive procedure, one would have been motivated to add Nation's groove to Kato's loudspeaker.

Claim 14: Kato, Shimomura et al., Nation, and Kato954 disclose a loudspeaker as in Claim 6; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion

(flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

Claim 17: Kato, Shimomura et al., Kato954, and Nation disclose a loudspeaker as in Claim 9; and Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

Claim 18: Kato, Shimomura et al., Nation, and Kato954 disclose a loudspeaker as in Claim 10; but Kato further discloses that the damper has an inner peripheral edge (inner edge portion [0060]) coming into contact with the connection member, the inner peripheral edge having a bent portion (coupling portion 18Aa [0060]) projecting toward the front side of the frame (see Fig. 1); and the cone has an inner peripheral edge (inner circumferential edge [0060], the inner peripheral edge of the cone having a bent portion (flange 16Bb [0060]) projecting toward the rear side of the frame, so as to surround the inner peripheral edge of the damper (see Fig. 1).

Conclusion

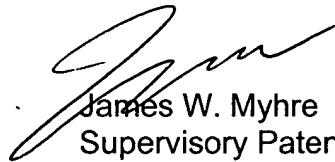
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Coen (3,176,086) discloses a transducer field structure assembly with an engaging means; Azima et al. (6,618,487) discloses an electro-dynamic exciter with a coupling member; Froeschle (4,061,890) disclose a loudspeaker with single layer rectangular wire voice coil wound on slit metal bobbin with a notch in the adjacent pole plate; Koura et al. (6,842,529) a speaker with a double cylinder; Nation4465905 (4,465,905) discloses a speaker assembly; and Kato423 (6,672,423), Kato440 (6,474,440), Shimomura665 (7,079,665) are the issued patents originating from relied references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Powen Ru whose telephone number is 571-270-1050. The examiner can normally be reached on Monday-Thursday 7:30am-3:30pm EST/EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Myhre can be reached on 571-270-1065. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PR
PR
8/17/2006


James W. Myhre
Supervisory Patent Examiner